

Pregnancy

Notice events of the menstrual cycle are coordinated such that ovulation is expected to occur at about day 14 of a 28-day cycle. An oocyte that has been ovulated survives and remains viable in the fallopian tube for only about 24 hours. The fertilized egg travels through the tube towards the uterus with the help of tiny hair-like projections called cilia which help move the egg along towards the uterus. The maximum length of time that sperm can remain viable in the female tract is 3 to 5 days. Sperm can reach an egg in the fallopian tube within an hour after intercourse.

Once the ovum is fertilized it will complete the 2nd meiotic division and then begin to develop. The journey to the uterus takes about 3 days. As the developing embryo, now called a blastocyst, enters the uterus it floats around for another 3-4 days as the uterus prepares for implantation. The window for successful implantation is relatively narrow and if the blastocyst does not implant at the proper time it will not survive. Typically, implantation occurs 6-7 days after fertilization. Recall that it is at about this time that the corpus luteum begins to regress and estrogen and progesterone levels begin to fall. If they get too low the endometrium will die and be sloughed off, along with the blastocyst. At the time of implantation cells of the blastocyst begin producing hCG which rescues the corpus luteum so that it continues to produce estrogen and progesterone. Progesterone is particularly important in maintaining the endometrium. As the placenta develops it begins to produce hormones, including progesterone and estrogen, and by the end of the first trimester the corpus luteum is no longer required to maintain the pregnancy. Note, home pregnancy tests check for the presence of hCG. Since it is produced by cells of the embryo it will not be present unless an egg has been fertilized.



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